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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,644	01/31/2002	William J. Allen	10015643-1	2148

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EXAMINER

NATNAEL, PAULOS M

ART UNIT	PAPER NUMBER
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2614

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/062,644	<b>Applicant(s)</b> ALLEN ET AL.	
	<b>Examiner</b> Paulos M. Natnael	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1-4,6-10,12-28** are rejected under 35 U.S.C. 102(e) as being anticipated by **Doany**, U.S. Patent No. 5,863,125.

Considering claim **1**, Doany discloses all claimed subject matter, note;

a) an illumination source configured to direct light along an optical path, is met by lamp 405, fig.7;

b) a first color filter having a first number of color regions, is met by filter surface 355, Fig.6;

c) a second color filter having a second number of color regions, is met by filter surface 360, Fig.6;

d) the claimed wherein the first and second color filters are configured so as to selectively cooperated in sequentially filtering the directed light to display an image, is met by the disclosure that "FIG. 5 shows reflectivity of the front and back surfaces of the 305, 310 of the color wheel 300 shown in FIG. 4. The

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reflectivity of first or front surface 305, provided by a dichroic coating, includes RGB sequential sections, with clear transmissive regions 330 separating the different colors. The reflectivity of second or back surface 310, provided by another dichroic coating, sequentially includes the following sections, partial B, G, R, and the remainder of B, where the different colors are separated by the clear transmissive regions 330." (col. 5, lines 39-49)

Considering claim 2, the display device of claim 1, wherein the color regions of the first color filter include a red region, a green region and a blue region, is met by first surface, Fig. 5;

Considering claim 3, the display device of claim 2, wherein the red region, the green region and the blue region are of approximately equivalent size, is met by first surface, Fig. 5;

Considering claim 4, the display device of claim 2, wherein the color regions of the second color filter include a red region, a blue region, a green region and a white region, is also met by second surface 310, Fig. 5;

Considering claim 6, the display device of claim 1, wherein the first and second color filters are disposed on a carriage, the carriage being configured to selectively position at least one of the first color filter and second color filter in the optical path, is met by motor 327 and 325, Figs. 5 and 6;

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Considering claim 7, the display device of claim 1, further comprising an optical path director configured to selectively direct the optical path through one of the first color filter and the second color filter, is met by PCS 420 and lens 430, fig.7;

Considering claim 8, the display device of claim 1, wherein the first and second color filters are disposed along a single optical path.

See rejection of claim 7;

Considering claim 9, the display device of claim 8, wherein the first and second color filters are coaxially coupled first and second color wheels, is met by filter surfaces of fig.5;

Considering claim 10, the display device of claim 9, further comprising one or more sensors configured to sense respective first and second angular orientations to determine angular relationship between the first and second color wheels, is met by the disclosure that "the front and rear wheel reflective surfaces 355, 360 are physically separated and parallel to each other...This physically [sic] separation provides two spatially separated reflected light beams 365,370. Once separated the two beams 365, 370 can be independently controlled to provide the desired angular separation. (col. 6, lines 14-21)

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Considering claim 12, the display device of claim 9, wherein the second color wheel is selectively fixed in a predetermined angular position while the first color wheel rotates to sequentially filter the directed light, is met by the disclosure that "This physically [sic] separation provides two spatially separated reflected light beams 365,370. Once separated the two beams 365, 370 can be independently controlled to provide the desired angular separation. (col. 6, lines 14-21)

[emphasis added by examiner]

Considering claim 13, the display device of claim 9, wherein the color regions of the first and second color wheels each include a red region, a green region and a blue region, each separated by a white region, is met by clear region 330, as illustrated on Fig. 5.

Considering claim 14, the display device of claim 13, wherein the first and second color wheels are selectively fixed in a specified angular alignment relative to each other and rotate together to sequentially filter the directed light.

See rejection of claim 12.

Considering claim 15, the display device of claim 14, wherein the specified angular alignment is dependent on one or more of image content, environment and user input.

See rejection of claim 10;

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Claim **16**, is a method claim of claim **1** and, thus, claim **16** is rejected for the same reasons as in claim **1**;

Considering claim **17**, the method of claim **16**, wherein sequentially filtering the directed light includes selecting a first color filter, fixing a position of a second color filter in a predetermined position in the optical path and moving the first color filter relative to the optical path.

See rejection of claims **6** and **12**;

Considering claim **18**, the method of claim **16**, wherein sequentially filtering the directed light includes altering the optical path to coincide with a selected one of plural color filters.

See rejection of claim **7**.

Considering claim **19**, the method of claim **16**, wherein sequentially filtering the directed light includes fixing the first color filter and the second color filter with respect to each other, and moving the first color filter and second color filter together.

See rejection of claims **6** and **12**;

Considering claim **20**, a sequential color filter system for filtering light directed along an optical path, the sequential color filter system comprising: a first color wheel having a plurality of color regions; and a second color wheel having a

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plurality of color regions including at least one white region; the first and second color wheels being configured so as to cooperate in sequentially filtering the light directed along the optical path.

See rejection of claim 6 and Fig.6;

Considering claim **21**, the sequential color filter system of claim 20, further comprising a carriage whereby the first color wheel is selectively moved into and out of the optical path.

See rejection of claim 6.

Considering claim **22**, the sequential color filter system of claim 21, wherein the second color wheel is selectively moved into and out of the optical path.

See rejection of claim 12;

Considering claim **23**, the image display system of claim 20, wherein the first and second color wheels are coaxially coupled and disposed in the optical path, is met by the configuration of fig.6;

Considering claim **24**, the image display system of claim 23, wherein the second color wheel is selectively angularly fixed while the first color wheel rotates to sequentially filter the directed light, is met by the disclosure that the system comprises "device to rotate said wheel for sequentially illuminating said at least two light valves with different colors simultaneously." col. 11, lines 26-28 And



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that "This physically [sic] separation provides two spatially separated reflected light beams 365,370. Once separated the two beams 365, 370 can be independently controlled to provide the desired angular separation. (col. 6, lines 14-21)

Considering claim **25**, the image display system of claim 24, wherein the first color wheel and the second color wheel are angularly fixed with respect to each other and rotate together to sequentially filter the directed light, is met by the disclosure on fig.6;

Considering claim **26**, a display device comprising: an illumination source configured to direct light along an optical path; a first sequential color filter means disposed along the optical path; and a second sequential color filter means disposed along the optical path; at least one of the first sequential color filter means and the second sequential color filter means being movable through the optical path to effect cooperative sequential filtering of the directed light to display an image.

See rejection of claim 1 and Fig.6;

Considering claim **27**, the display device of claim 26, wherein the first sequential color filter means is selectively fixed relative to the second sequential color filter means, is met by the disclose on fig. 6.

Considering claim **28**, a sequential color filter system for filtering light directed along an optical path, the sequential color filter system comprising: a first sequential color filter movable within the optical path; and a second sequential color filter movable within the optical path; the first sequential color filter and second sequential color filter each having a plurality of color regions configured to cooperatively filter light directed along the optical path.

See rejection of claims 1-6;

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims **5** and **11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doany, U.S. Patent No. 5,863,125.

Considering claim **5**, the display device of claim 4, wherein the red region, the green region, the blue region and the white region are of approximately equivalent size;

Regarding claim 5, Doany discloses clear region smaller than the color regions. However, it would have been an obvious matter of design choice to

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make the regions approximately equivalent size since such a modification would have involved a mere change in the size of the component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105, USPQ 237 (CCPA 1955).

Considering claim 11, the display device of claim 9, wherein the color regions of the first color wheel include a red region, a green region and a blue region of approximately equivalent size, and wherein the color regions of the second color wheel include a red region, a green region and a blue region of approximately equivalent size and a white region of relatively smaller size;

See rejection of claim 5.

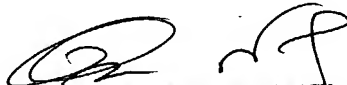
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (703) 305-0019. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**PAULOS M. NATNAEL**  
**PATENT EXAMINER**PMN  
August 7, 2004